

CLAIMS

Sub A.1 What is claimed is:

1. An actuator comprising: a motor in driving connection with a cam rotatable about a cam axis, the actuator further including a cam follower connected to an output member, in which powered rotation of the cam causes the cam follower to be radially displaced relative to the cam axis to provide differing output positions of the output member and in which the profile of the cam includes a radial stop which, in conjunction with the cam follower, act as a detent so that the cam follower is capable of controlling the position of the cam.
2. The actuator as defined in claim 1 in which the radial stop and cam follower act as a detent when the motor is not being powered.
3. The actuator as defined in claim 1 in which external actuation of the output member causes rotation of the cam.
4. The actuator as defined in claim 3 in which the radial stop and cam follower act as a detent during external actuation of the output member.
5. The actuator as defined in claim 1 in which the cam has a first radial stop to stop the cam follower at a first radius and a second radial stop to stop the cam follower at a second radius the first and second radii being different.
6. The actuator as defined in claim 5 in which the cam has a third radial stop to stop the cam follower at a third radius, the first, second and third radii being different.
7. The actuator as defined in claim 1 in which there is a plurality of first and second and third stops.

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8. The actuator as defined in claim 1 in which the cam follower is biased radially outwardly relative to the cam axis.
9. The actuator as defined in claim 1 in which the cam follower is biased radially inwardly relative to the cam axis.
10. The actuator as defined in claim 1 in which the cam follower is capable of moving between an radially outer position and a radially inner position and the cam follower is biased to a bias position radially between the radially outer and radially inner position.
11. The actuator as defined in claim 1 in which the cam profile between the first and second stops is profiled such that the cam follower moves to a radius which is different than both the first and second radii.
12. The actuator as defined in claim 1 in which the cam profile includes a spirally inwardly curved portion.
13. The actuator as defined in claim 1 in which the cam profile includes a spirally outwardly curved portion.
14. The actuator as defined in claim 1 in which the cam profile includes a first substantially radially orientated portion to allow the cam follower to move radially inwards or outwards relative to the cam axis.
15. The actuator as defined in claim 1 in which the cam profile includes a return stop to prevent the backward rotation of the cam past the return stop.

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- ~~16. The actuator as defined in claim 1 in which the motor is powered in a single direction to provide for the differing output positions of the output member.~~
- ~~17. The actuator as defined in claim 1 having a powered position corresponding to each of the output positions of the actuator.~~
- ~~18. The actuator as defined in claim 1 having an at rest position differing from the powered output position of the actuator.~~
- ~~19. The actuator as defined in claim 1 for use in a vehicle door locking system to provide locking and unlocking of a vehicle door lock.~~
- ~~20. The actuator as defined in claim 19 further providing for superlocking of the vehicle door lock.~~
- ~~21. The actuator as defined in claim 1 in which the output positions of the output member are located on an arc of a circle.~~
- ~~22. The actuator as defined in claim 1 in which the motor is connected with the cam via a centrifugal clutch.~~
- ~~23. The actuator as defined in claim 1 in which the motor is connected with the cam via a gear and pinion arrangement.~~

Sub A. 7

24. A kit of parts for assembly to provide an actuator comprising:
said actuator including a motor in driving connection with a pair of cams rotatable
about a cam axis each with a different cam profile and only one of which is assembled
into the actuator, the actuator further including a cam follower connected to an output
member, in which powered rotation of the assembled cam causes the cam follower to be
radially displaced relative to the cam axis to provide differing output positions of the
output member and in which the profile of the cam includes a radial stop which, in
conjunction with the cam follower, act as a detent so that the cam follower is capable of
controlling the position of the assembled cam.